silicide, having a thickness between 50 and 3000 angstroms." *Lee* discloses a metal silicide layer (40) at the boundry of the tip metal (47) and the silicon emitter (37) . . . formed in accordance with the kind of the gate metal, namely, one of $CrSi_2$, $MoSi_2$, $TaSi_2$, Wsi_2, and $ZrSi_2$" (col. 4, lines 19-24). In contract to the present invention, the metal silicide emitter layer in *Lee* is formed expressly for reinforcing the tip and to block permeation of the metal component to the insulating layers (col. 2, lines 5-8; col. 4, lines 24-38). Thus, *Lee* does not teach or suggest that the thickness levels recited in claims 31 and 39, since the disclosure in *Lee* uses the metal silicide layer as a partial insulating region for the emitting tip. Moreover, *Lee* also teaches that the metal silicide is formed *only on a portion the tip* of the cone shaped emitter (col. 3, lines 10-13), and expressly disparages the prior art for using a metal silicide emitting layer over the entire tip (col. 2, lines 15-26). Again, this is because *Lee* is directed to a different purpose than the present invention.

Similarly, *Kumar* discloses a micro-tip (12) being comprised of a metal "such as molybdenum, or a semiconductor material such as silicon, or a combination of molybdenum and silicon" (col. 1, lines 56-58). While *Kumar* discloses a molybdenum-silicon combination, there is no teaching that the combination is in the form of a metal silicide.

Alternately, *Kumar* discloses a micro-tip (12) "comprised of a submicro-tip (18) which may consist of such materials as a conductive metal (e.g., molybdenum), with layer (19) formed thereon. Layer (19) has typically comprised any well-known low work function material" (col. 2, lines 10-14). The "low work function material" is defined in *Kumar* as "a cermet, CVD (chemical vapor deposition) diamond films, aluminum nitrite, gallium nitrite, or amorphic diamond" (col. 2, lines 51-53). These materials disclosed in *Kumar* <u>are not metal silicides</u> as claimed in the present application, and have materially different properties.

In contrast, the present invention comprises a method, and the resulting claimed structure, for forming a sufficiently thin metal silicide emission layer on the entire tip of the emission site, wherein the sharp profile of the emission tip is retained (see specification,

page 4, lines 13-21). The applicant reiterates that the sharp profile resulting from the thinned emitter layer enhances the electron emission from the tips and results in better performance for displays utilizing this feature (see specification page 8, lines 7-9). The Examiner's assertion that the use of a known material (metal silicide) used in a particular way at a particular thickness is misplaced. In determining the differences between the prior art and the claims, the question is not whether the differences themselves would have been obvious, but whether the claimed invention *as a whole* would have been obvious. *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 218 USPQ 871 (Fed. Cir. 1983). Distilling an invention down to the "gist" or "thrust" of an invention disregards the requirement of analyzing the subject matter "as a whole." *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983).

Furthermore, the Examiner correctly points out that a particular parameter must first be recognized as a result-effective variable (i.e., a range thickness value that achieves a recognized result) before the determination of the optimum or workable ranges might be characterized as routine experimentation (MPEP 2144.05). To this end, *Kumar* and *Lee* do not recognize this result-effective variable in their disclosures, as they are wholly silent on these features (much like the patentee in *In re Antonie*, cited by the Examiner). Therefore, the features of the material (metal silicide) and it's thickness cannot be said to be "routine experimentation."

Accordingly, Applicant submits that the §102 and §103 rejections are improper, and respectfully requests that the rejections for claims 31 and 39, and all claims depending therefrom, be withdrawn. Furthermore, since *Lee* teaches the metal silicide layer as being useful only on a portion of the tip in an insulating capacity, the disclosure in *Lee* would could not be properly combined with *Kumar* under 35 U.S.C.§103, since *Kumar* which teaches the use of an emitter layer over the entire tip for an entirely different purpose.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this

application to issue.

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Respectfully submitted,

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